GLOSSARY

Adaptive Management is a systematic process for continually improving management policies and practices by learning from the outcomes of operational programs. Its most effective form - "active" adaptive management - employs management programs that are designed to experimentally compare selected policies or practices by implementing management actions explicitly designed to generate information useful for evaluating alternative hypotheses about the system being managed. http://science.nature.nps.gov/im/monitor/Glossary.htm

Anthropogenic effects are caused by or attributed to humans. As used here, they are human-influenced factors that cause stress in natural systems.

ANILCA is the Alaska National Interest Lands Conservation Act or Public Law 96-487 - Dec. 2, 1980, that provided for the designation and conservation of certain public lands in Alaska, including the designation of units of the National Park Service, National Wild and Scenic Rivers, and National Wilderness Preservation Systems < http://www.r7.fws.gov/asm/anilca/toc.html >.

Attributes are any living or nonliving features or processes of the environment that can be measured or estimated and that provide insights into the state of the ecosystem. The term **Indicator** is reserved for a subset of attributes that is particularly information-rich in the sense that their values are somehow indicative of the quality, health, or integrity of the larger ecological system to which they belong (Noon 2003). See Indicator. http://science.nature.nps.gov/im/monitor/Glossary.htm

Biotic integrity is the ability to maintain and support "a balanced, integrated, adaptive community of organisms having a species composition, diversity, and functional organization comparable to that of the natural habitat of the region."

Community is a group of interacting populations in time and space. Sometimes, a particular subgrouping may be specified, such as the fish community in a lake or the soil arthropod community in a forest. http://www.epa.gov/emap/html/pubs/docs/resdocs/mglossary.html

Drivers are major external driving forces on ecosystems, such as climate change, regional land-use change, or air pollution that have large-scale influences on natural systems. Drivers can be natural forces or anthropogenic. These may be related to global or regional changes in climate, nutrient inputs, or human pressures.

Ecological integrity is a concept that expresses the degree to which the physical, chemical, and biological components (including composition, structure, and process) of an ecosystem and their relationships are present, functioning, and capable of self-renewal. Ecological integrity implies the presence of appropriate species, populations and communities, and the occurrence of ecological processes at appropriate rates and scales, as well as the environmental conditions that support these taxa and processes.

Ecoregion is an area over which the climate is sufficiently uniform to permit development of similar ecosystems on sites having similar properties. Ecoregions contain many landscapes with different spatial patterns of ecosystems.

Ecosystem is defined as, "a spatially explicit unit of the Earth that includes all of the organisms, along with all components of the abiotic environment within its boundaries" (Likens 1992). http://science.nature.nps.gov/im/monitor/Glossary.htm

Ecosystem management is the process of land-use decision making and land-management practice that considers the full suite of organisms and processes characterizing and comprising the ecosystem. It is based on the best understanding currently available as to how the ecosystem works. Ecosystem management includes a primary goal of sustainability of ecosystem structure and function, recognition that ecosystems are spatially and temporally dynamic, and acceptance of the dictum that ecosystem function depends on ecosystem structure and diversity. Coordination of land-use decisions is implied by the whole-system focus of ecosystem management.

Focal resources are park resources that, by virtue of their special protection, public appeal, or other management significance, have paramount importance for monitoring, regardless of current threats or whether they would be monitored as an indication of ecosystem integrity. Focal resources might include ecological processes, such as deposition rates of nitrates and sulfates in certain parks; or they may be a species that is harvested, endemic, alien, or has protected status.

Function is the role that any process, species, population, or physical attribute plays in the interrelation between living and non-living components of ecosystems.

Indicators are a subset of monitoring attributes that are particularly information-rich in the sense that their values are somehow indicative of the quality, health, or integrity of the larger ecological system to which they belong (Noon 2003). Indicators are a selected subset of the physical, chemical, and biological elements and processes of natural systems that are selected to represent the overall health or condition of the system.
http://science.nature.nps.gov/im/monitor/Glossary.htm

Inventory is an extensive point-in-time effort to determine location or condition of a resource, including the presence, class, distribution, and status of plants, animals, and abiotic components, such as water, soils, landforms, and climate.

Landscape - A spatially structured mosaic of different types of ecosystems interconnected by flows of materials (e.g., water, sediments), energy, and organisms. (Miller et al. 2003)

Monitoring differs from inventory in adding the dimension of time, and the general purpose of monitoring is to detect changes or trends in a resource. Elzinga et al. (1998) defined monitoring as "The collection and analysis of repeated observations or measurements to evaluate changes in condition and progress toward meeting a management objective." Detection of a change or trend may trigger a management action, or it may generate a new line of inquiry. Monitoring is often done by sampling the same sites over time, and these sites may be a subset of the sites sampled for the initial inventory.

Research has the objective of understanding ecological processes and, in some cases, determining the cause of changes observed by monitoring.

Stressors are physical, chemical, or biological perturbations to a system that are either (a) foreign to that system or (b) natural to the system but applied at an excessive [or deficient] level

(Barrett et al. 1976:192). Stressors cause significant changes in the ecological components, patterns and processes in natural systems. Examples include water withdrawal, pesticide use, timber harvesting, traffic emissions, stream acidification, trampling, poaching, land-use change, and air pollution. http://science.nature.nps.gov/im/monitor/Glossary.htm

Structure refers to the components of an ecosystem, including plants, animals, and the nonliving environment.

Trend is a unidirectional change.

Vital Signs, as used by the National Park Service, are a subset of physical, chemical, and biological elements and processes of park ecosystems that are selected to represent the overall health or condition of park resources, known or hypothesized effects of stressors, or elements that have important human values. The elements and processes that are monitored are a subset of the total suite of natural resources that park managers are directed to preserve "unimpaired for future generations," including water, air, geological resources, plants and animals, and the various ecological, biological, and physical processes that act on those resources. Vital signs may occur at any level of organization including landscape, community, population, or genetic level, and may be compositional (referring to the variety of elements in the system), structural (referring to the organization or pattern of the system), or functional (referring to ecological processes). http://science.nature.nps.gov/im/monitor/Glossary.htm